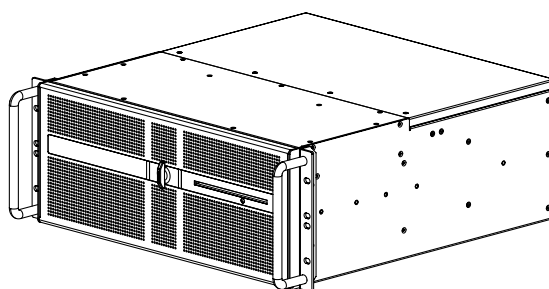
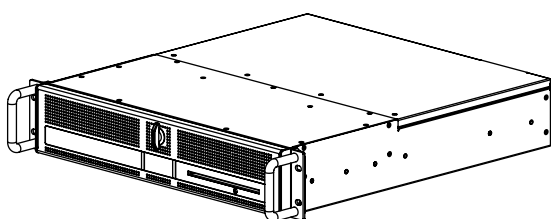


USER MANUAL



HT 216 / HT 416 - Maritime Rack Computers

HT 216 xxx-Ayyy

HT 416 xxx-Ayyy

xxx=standard or customized
yyy=configuration dependent

User Manual HT 216 / HT 416	
Updated: 20 Jun 2011	Doc Id: INB100084-1 (Rev 12)
Created: 363	
Approved: 6987	

Please visit www.hatteland-display.com for the latest electronic version of this manual.

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Aamsosen, N-5578 Nedre Vats, Norway

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All other product names or trademarks are properties of their respective owners !

WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Contents

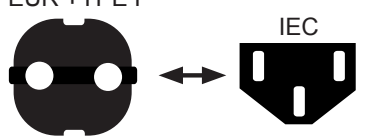
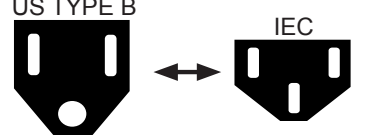
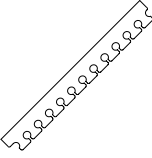
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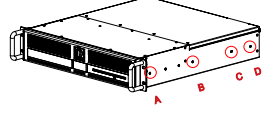
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Contents of package

This product is shipped with:

Item	Description	Illustration	
 FS-CABLE EU	1 pcs of power cable European Type F "Schuko" to IEC. Length 1.8m		
 80099	1 pcs of power cable US Type B plug to IEC. Length 1.8m		
 MEDIA STD01	Documentation and Driver DVD for factory installed components like mainboard, IDE, network etc. Note: To use this DVD disc you will need an external USB CD/DVD drive or provide means of getting contents copied over via USB memory stick/network to the operating system. You can alternatively download the drivers from our website www.hatteland-display.com		Menu and Driver browser for Microsoft® Windows®
	1 pcs of cable relief bracket including screws.		
	Test Reports papers: 1 pcs of Product Declaration 1 pcs of Computer Checklist 1 pcs of BurnInTest Certificate		

Package may also include: (based on accessories/options ordered)

Item	Description	Illustration	
 HT 00215 OPT-A1	Recovery Kit (USB Flash) For reverting back to factory/customized installations. Note: Only applicable for factory delivered units with HDD/SDD hardware.		Recovery Image (located on hidden partition on HDD/SDD)
 HT 00250 OPT-A1	Mounting rails kit 2 x 20 inch long ball bearing sliding rails. 19 inch Rack compatible.		
	For computers that include 3rd party hardware; the package / accessories box may also include additional CD / HW / Information from 3rd party supplier(s).		

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General

About this manual

The manual contains electrical, mechanical and input/output signal specifications. All specifications in this manual, due to manufacturing, new revisions and approvals, are subject to change without notice. However, the last update and revision of this manual are shown both on the frontpage and also in the "Revision History" chapter at the end of the manual.

Furthermore, for third party datasheet and user manuals, please see dedicated Documentation and Driver DVD delivered with the product or contact our sales/technical/helpdesk personnel for support.

About Hatteland Display

Hatteland Display is the leading technology provider of specialized display and computer products, delivering high quality, unique and customized solutions to the international maritime, naval and industrial markets.

The company represents innovation and quality to the system integrators world wide. Effective quality assurance and investment in sophisticated in-house manufacturing methods and facilities enable us to deliver Type Approved and Mil tested products. Our customer oriented approach, technical knowledge and dedication to R&D, makes us a trusted and preferred supplier of approved solutions, which are backed up by a strong service network.

hatteland-display.com

You will find our website full of useful information to help you make an informed choice as to the right product for your needs. You will find detailed product descriptions and specifications for the entire range on offer be it Series 1, Series 2, Computers & Panel Computers, Military solutions as well as the range of supporting accessories. The site carries a wealth of information regarding our product testing and approvals in addition to company contact information for our various offices around the world, the global service centers and the technical help desk, all ensuring the best possible support wherever you, or your vessel, may be in the world.

Contact Information

Head office, Vats / Norway: Hatteland Display AS Åmsosen N-5578 Nedre Vats, Norway Tel: +47 4814 2200 Fax: +47 5276 5444 mail@hatteland-display.com	Sales office, Frankfurt / Germany: Hatteland Display GmbH Werner Heisenberg Strasse 12, D-63263 Neu-Isenburg, Germany Tel: +49 6102 370 954 Fax: +49 6102 370 968
Sales office, Oslo / Norway: Solbråveien 20 N-1383 Asker Norway Tel: +47 4814 2200 Fax: +47 5276 5444	Sales office, Aix-en-Provence / France: Hatteland Display SAS 31 Parc du Golf, 350, Avenue JRGG de la Lauzière - CS 90519 13593 Aix-en-Provence Cedex 3, France Tel: +33 (0)4 42 16 35 15 Fax: +33 (0)4 42 16 35 09
Sales office, San Diego / USA: Hatteland Display Inc. 11440 W. Bernardo Court, Suite 300 San Diego, CA 92127, USA Tel: +1 858 753 1959 Fax: +1 858 430 2461	

For an up-2-date list, please visit www.hatteland-display.com/locations

Computers introduction

Hatteland Display's range of type-approved computers is designed to perform in harsh environments while providing the performance and flexibility you expect. We offer rack mount and black box/standalone computer solutions for every need. Our computers are used by system integrators, boat builders and end-users and can be found on all vessel types, all over the world.

If you are looking for a high quality computer for navigation, monitoring or entertainment solutions, Hatteland Display can fulfil your high expectations at a reasonable cost.

Our computer range covers all eventualities and requirements. We offer a wide range of processor choices, HDD and power options, and solid state technology, neatly engineered within industry standard form factors such as 19" rack mount, 2U, 3U and 4U.

We continually develop our computers portfolio to make the best use of emerging computer technology so you can be sure that your Hatteland Display computer offers the power needed to run modern applications, with the flexibility to be installed wherever you want, for any marine use.

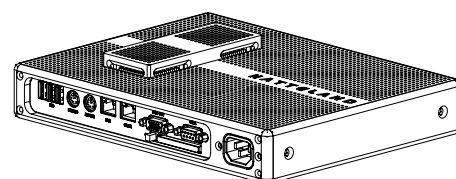
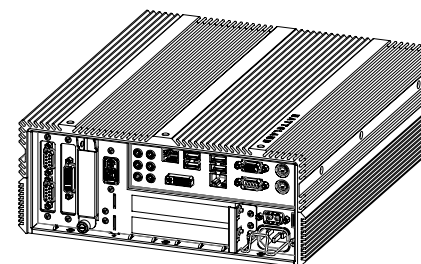
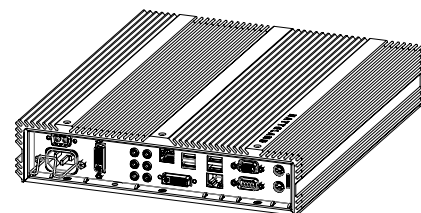
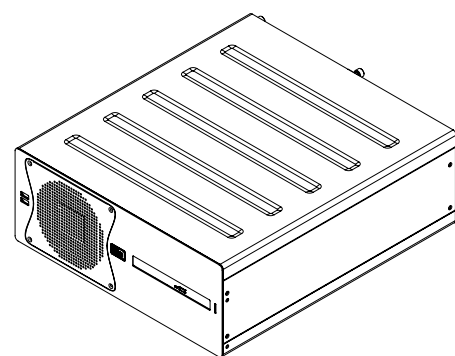
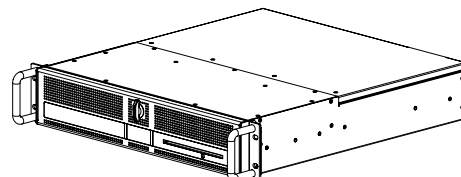
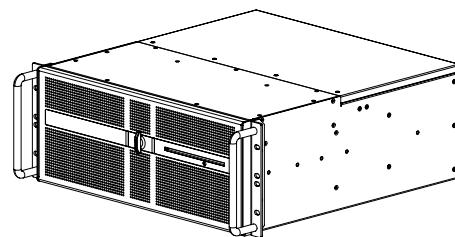
Designed to perform in harsh environments...

Winner of Red Dot awards 2009 / 2007

In 2009 the Hatteland Display HT C01 standalone computer won a prestigious Red Dot Award with Honourable Mention distinction, successful detail solution.

The Design Zentrum Nordrhein Westfalen in Germany has been marking outstanding international product design with its famous and highly regarded dot since 1955. The Red Dot Product Design Award is an annual international awards scheme where products from all industries are chosen for their innovative visual and industrial design.

In 2007 the Hatteland Display Series 2 Display/Panel Computers range won the Red Dot Award for the overall design and modular backpack concept, which docks into the screen at the back, comprises either the typical display connections or a fully equipped panel computer. Even the computer backpack can operate on its own as a stand-alone computer.

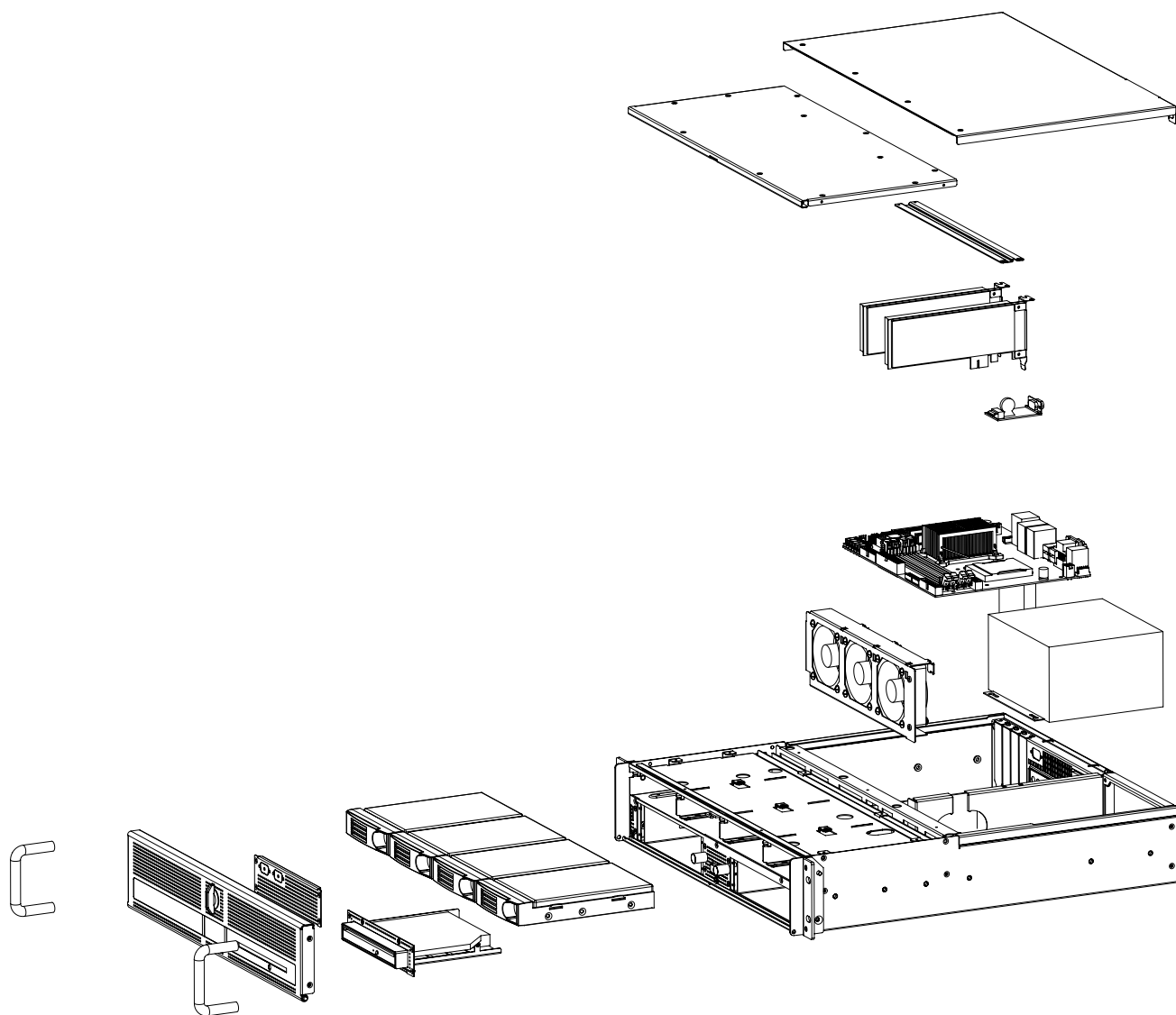


reddot design award
honourable mention 2009



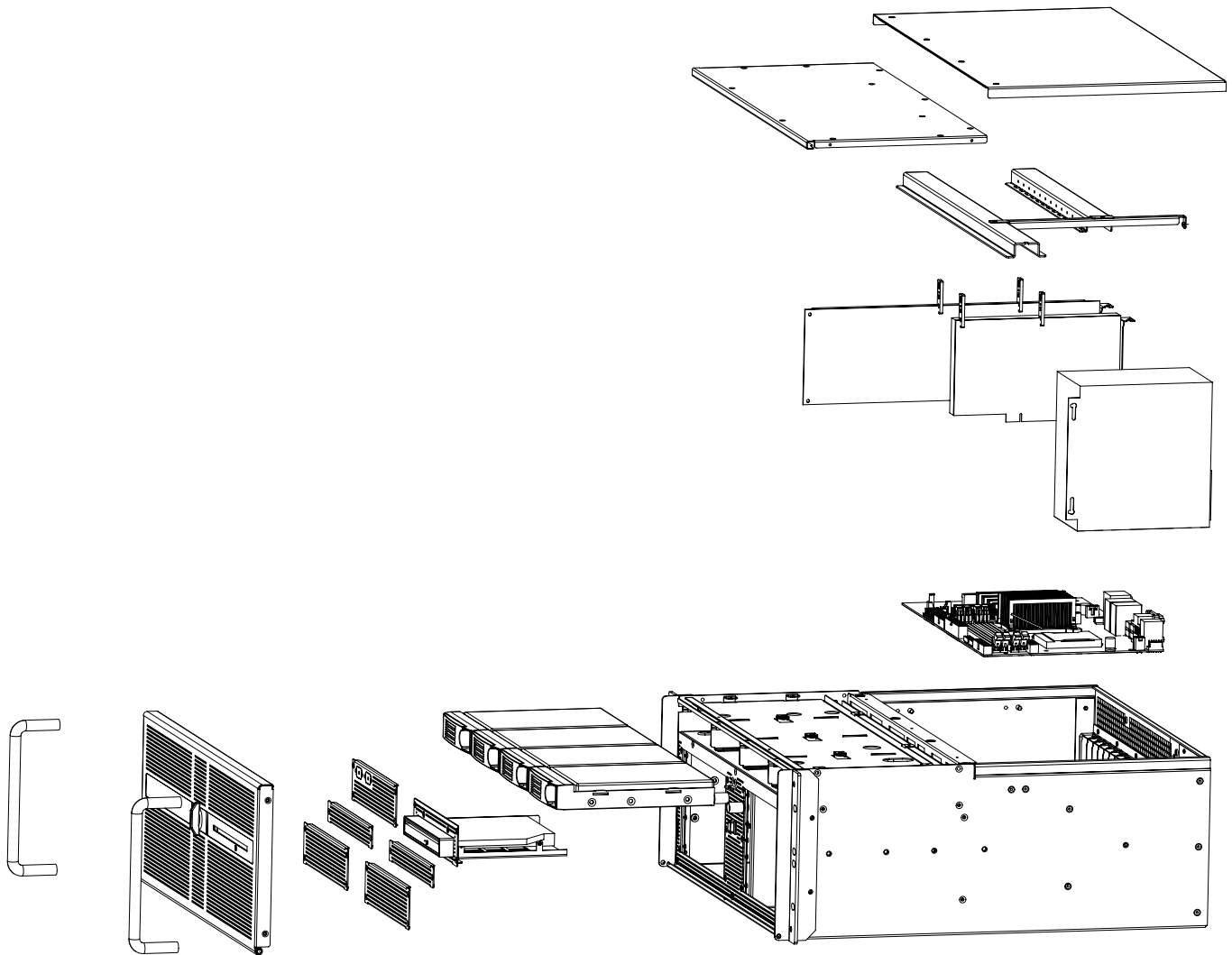
reddot design award
winner 2007

Exploded View HT 216



General illustration

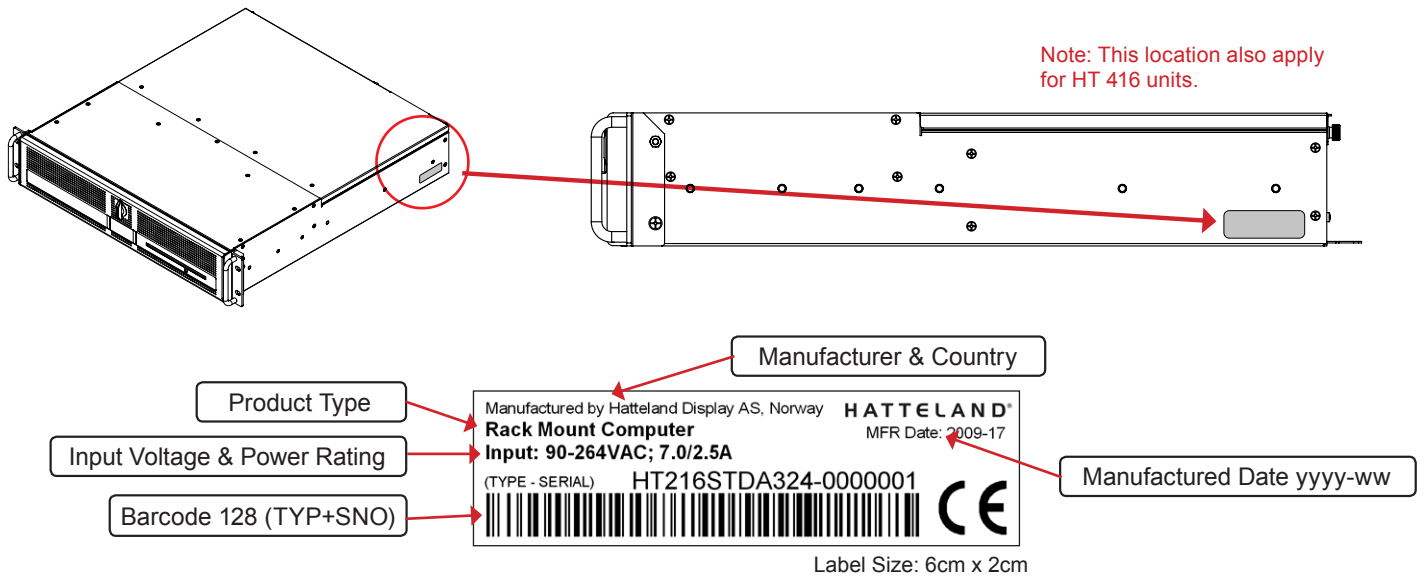
Exploded View HT 416



General illustration

Product Labels (Examples)

Serial Number Label Placement and Layout (external)

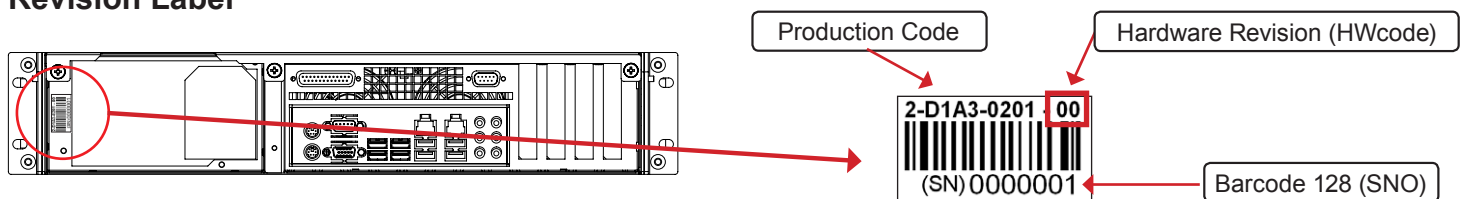


Serial Number Label Nomenclature

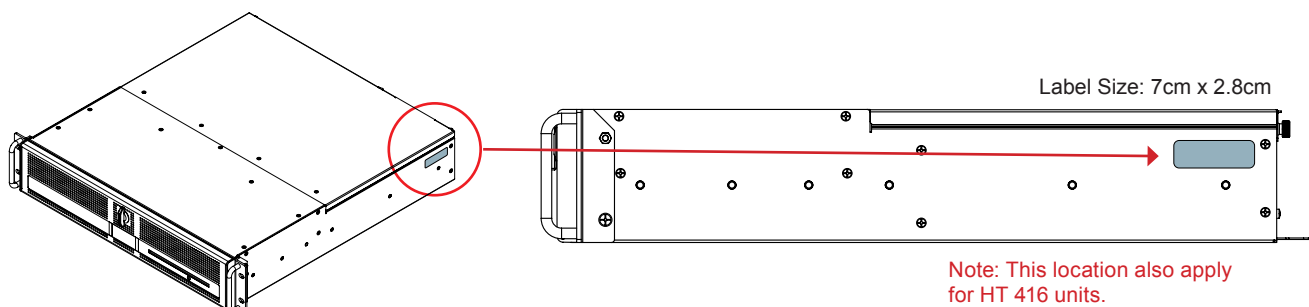
AA XXX AAA-Axxx-XXXXXX NOMENCLATURE - A=Letters, X=Numbers
 HT 216 STD-A111-000005 Example

	Serial Number, 7 digits
	Configuration ID (for components like memory, storage etc.)
	Power Input ID (A=90-264VAC)
	Installed Operating System ID / No Installed OS ID
	Abbreviation for Standard (ST) or reserved customer ID
	Chassis Revision ID
	Electronics / Mainboard / Technology Revision ID
	Chassis Form Factor (2=2U, 4=4U)
	Manufacturer ID / Product Series ID

Revision Label



Operating System Serial Number Label Placement (external)



Installation

General Installation Recommendations

Installation and mounting of computers

1. Units may be intended for various methods of installation or mounting (rack mounting, panel mounting, bracket mounting, ceiling/wall mounting); for details, please see the relevant mechanical drawings.
2. Adequate ventilation is a necessary prerequisite for the life of the unit. The air inlet and outlet openings must definitely be kept clear; coverings which restrict ventilation are not permissible. The product might be without any ventilation apertures which means pt.2 does not apply.
3. Exposure to direct sunlight can cause a considerable increase in the temperature of the unit, and might under certain circumstances lead to overtemperature. This point should already be taken into consideration when the bridge equipment is being planned (sun shades, distance from the windows, ventilation, etc.)
4. Space necessary for ventilation, for cable inlets, for the operating procedures and for maintenance, must be provided.
5. To further improve the cooling of the unit we recommend installing Cooling Fans underneath blowing upwards into the unit air inlet. This may be required in high temperature applications and also when there is reason to expect temperature problems due to non-optimal way of mounting.
6. For DC powered computer units proper grounding must be achieved by connecting a wire from the unit's ground (GND) screw (as indicated on the unit with a  icon) to the grounding in your installation setup.

The wire should have a cross sectional area of at least 6mm². The GND screw is located near the other I/O connectors. Please review the "Physical Overview" chapter for further help.

General mounting instructions

1. The useful life of the components of all Electronics Units generally decreases with increasing ambient temperature; it is therefore advisable to install such units in air-conditioned rooms. If there are no such facilities, these rooms must at least be dry, adequately ventilated and kept at a suitable temperature in order to prevent the formation of condensation inside the unit.
2. With most Electronic Units, cooling takes place via the surface of the casing. The cooling must not be impaired by partial covering of the unit or by installation of the unit in a confined cabinet.
3. In the area of the wheel house, the distance of each electronics unit from the magnetic standard compass or the magnetic steering compass must not be less than the permitted magnetic protection distance. This distance is measured from the centre of the magnetic system of the compass to the nearest point on the corresponding unit concerned. The exact distance is often mentioned in the specific product specifications.
4. Transportation damage, even if apparently insignificant at first glance, must immediately be examined and be reported to the freight carrier. The moment of setting-to-work of the equipment is too late, not only for reporting the damage but also for the supply of replacements.

Cables

Use only high quality shielded signal cables. For RGB/DVI cables use only cables with separate coax for Red, Green and Blue.

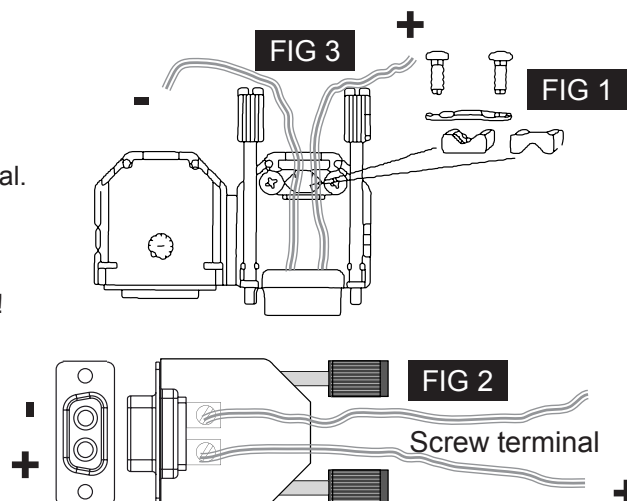
Configuring DC power input housing connector

Note: Only applicable for certain models!

For installations that require DC power input, use the provided 2-pin DC Power Input housing with internal cable screw terminal.

- 1: Open the housing
- 2: Unmount the fasteners. (FIG 1)
- 3: Mount power cables to screw terminal (FIG 2). Note polarity!
- 4: Secure the cable tightly with fasteners (FIG 3, FIG 1)
- 5: Close the housing

Note: Please check polarity before connecting any cables to the screw terminal.

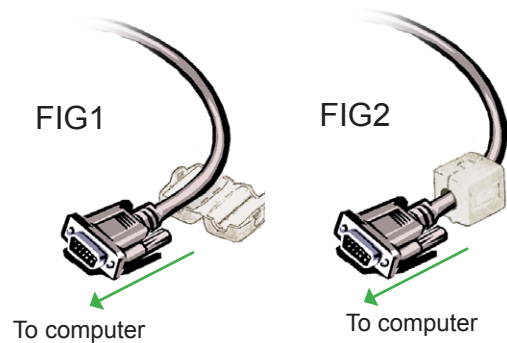


General Installation Recommendations

Ferrites

On selected products, the ferrites prevent high frequency electrical noise (radio frequency interference) from exiting or entering the equipment. To verify if your product requires this, please see the "Physical Overview" chapter in this manual. The ferrites are part of the contents of the package also specified in the "Contents Of Package" chapter early in this manual. **The ferrites must be mounted on specific cables to fully comply with the Type Approvals!**

The ferrites should be mounted (clipped in place on the cable as shown in illustration) as close as possible to the cable connector on the rear side of the computer product. Open up the ferrite, place the cable inside as shown in FIG1, and then gently close it until a click can be heard (FIG2).

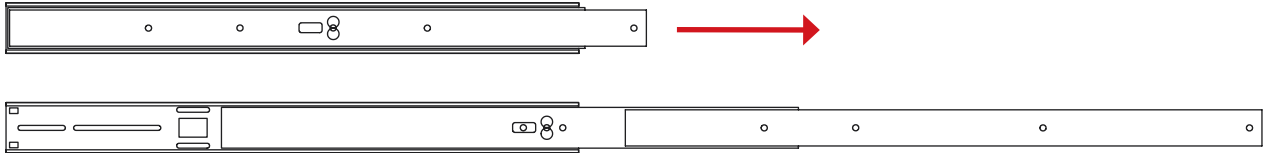


General Installation Recommendations

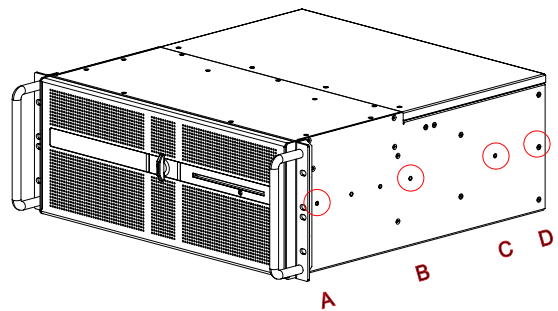
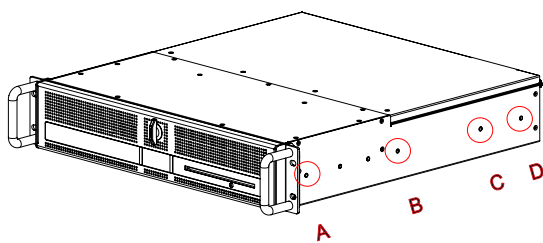
Sliding Rails - HT 00250 OPT-A1

Suitable for use with 19 Inch rack mounting. Load rating up to 52kg, 9.6mm slide thickness. Lock-out. Front Disconnect. Optional enclosure mounting brackets. Note: Manufactured by 3rd party. Sliding rails representation below are simplified in terms of visual appearance.

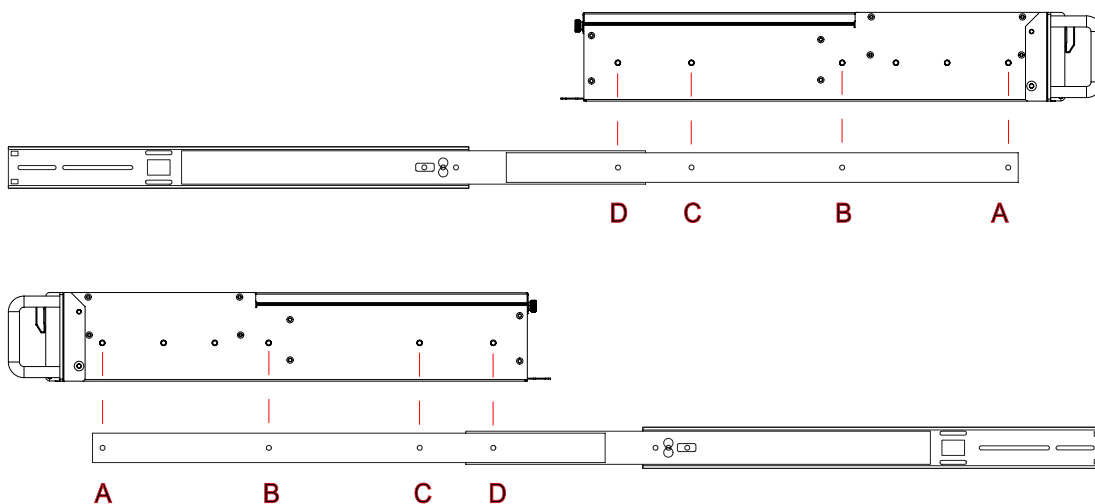
1: Pull out the rails to extend it fully



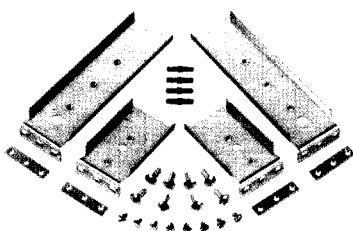
2: Note the locations of suitable mounting holes on the 2U/4U cabinet for the sliding rails



3: Mount the rails on left and right side of the 2U/4U cabinet. You may need to align the entire slide construction to discover the suitable mounting holes. M4 screws are suitable (included in kit).



4: Mount the additional bracket kit into your 19 Inch rack if needed. Comes complete with brackets, gaskets and mounting screws.



General Installation Recommendations



CAUTION

This unit contains electrostatic sensitive devices.
Observe precautions for handling.

Computer Upgrade Precaution Note

Users who needs to open the computer to change PCI cards, install more memory, or set internal jumpers can do so without voiding the warranty. Before opening a unit's housing to remove or touch a board, proper ESD measurements must be taken!

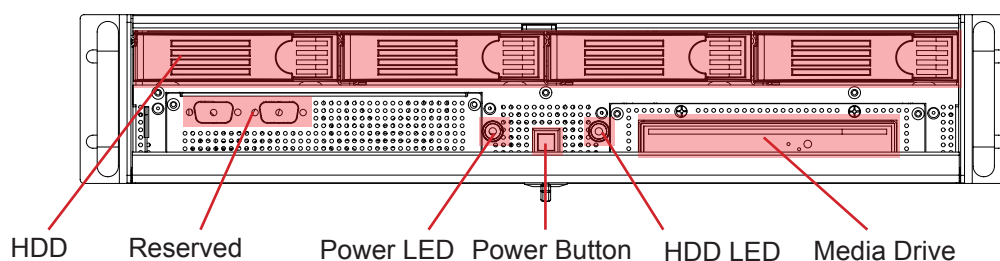
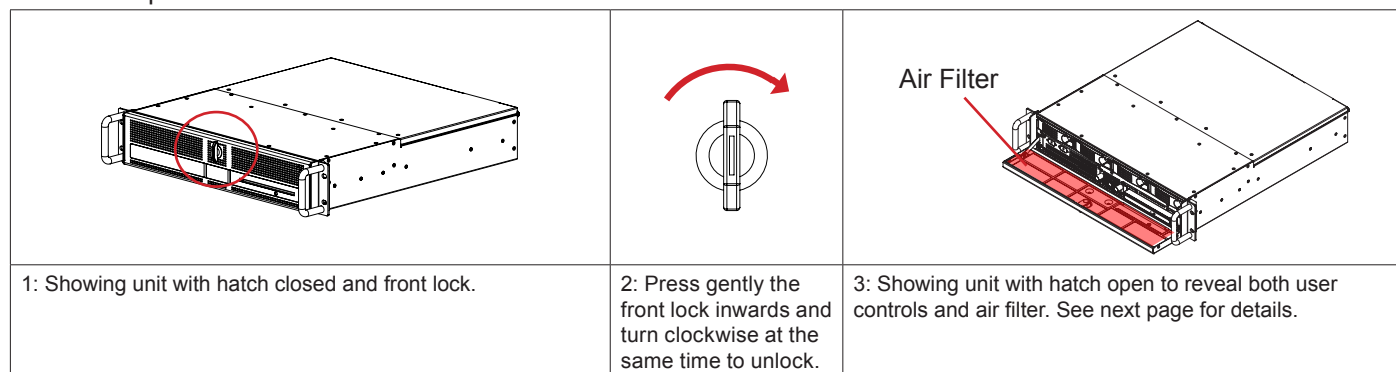
1. Operator should ground himself by using a wrist band.
2. The wrist band should be connected to ground via a ground cord.
3. A one megaohm resistor, installed in the wrist connection end of the ground cord, is a safety requirement.
4. Alternatively an Static-dissipative ESD work mat could be positioned at the workplace.
The 3M™ 8501 Portable Field Service Kit is a good choice for this purpose.

All assisting persons who might come into contact with the endangered boards must also use the ESD equipment.

Operation

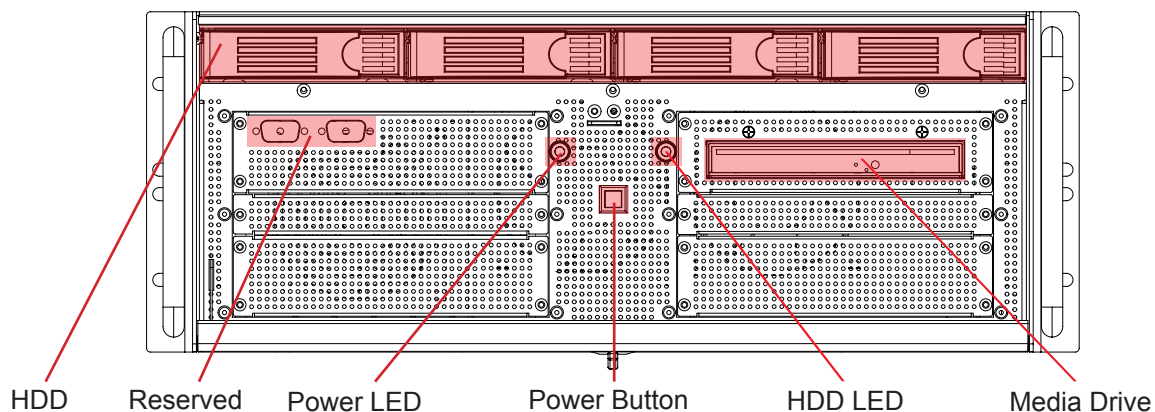
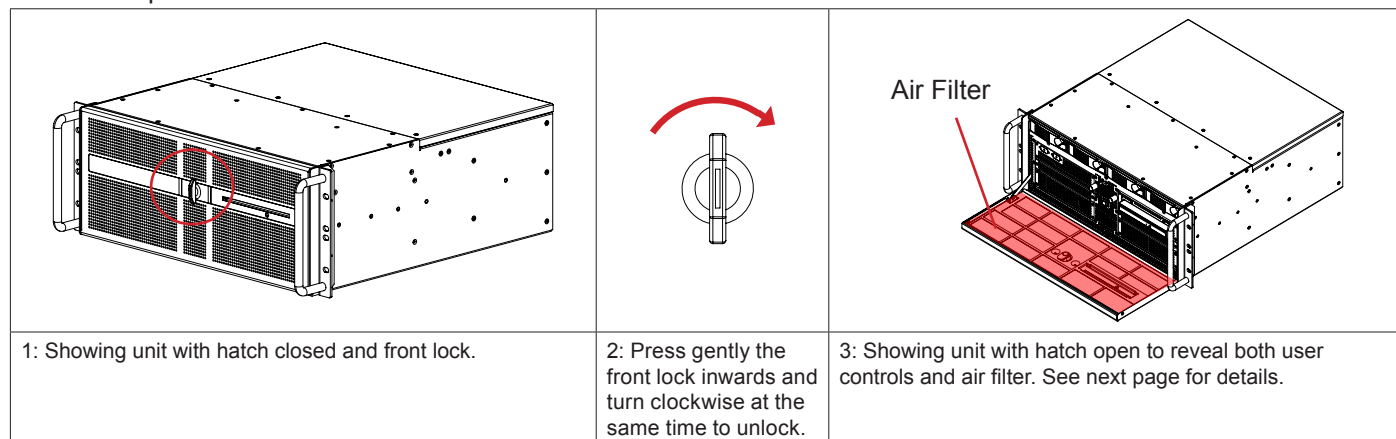
Front area - HT 216 computer

The unit's operational controls and air filter are located behind the lockable front hatch.



Front area - HT 416 computer

The unit's operational controls and air filter are located behind the lockable front hatch.

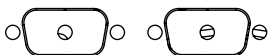


Operation



HDD TRAY 1,2,3,4:

Replaceable HDD tray bay which supports 3.5" SATA hard drives. The amount of HDD available and installed is configuration dependent. By factory default, 1 x HDD is installed. Any HDD should not be replaced or dismounted from the unit while the operating system is running and the computer unit is turned on. Doing so may cause loss of data or software crashes upon reboot.



RESERVED:

These D-SUB shaped blinded holes are reserved for future applications.



POWER LED:

The Power LED will illuminate static green when the computer unit is powered and turned on.



Power Button:

To turn ON the computer, press down button and release it immediately. The Power LED will illuminate green and any operating system installed will automatically boot. To turn OFF the computer, press down this button and hold it for 3 seconds. The operating system may require additionally tasks to be performed before computer shuts down and turns off the unit. You can also turn off the computer by using the operating system own "shut down" feature. Either to stand-by mode, hibernation or sleep is also possible from most operating systems.



HDD LED:

The HDD LED will illuminate red when there is read/write activity on any of the installed HDD in the HDD trays. When there is no HDD activity the LED will be off.



MEDIA DRIVE:

By factory default a DVD/CD-RW recorder/player is installed. The drive features an eject button, a read/write activity LED and a small hole to eject any media even if the computer unit is not powered on.



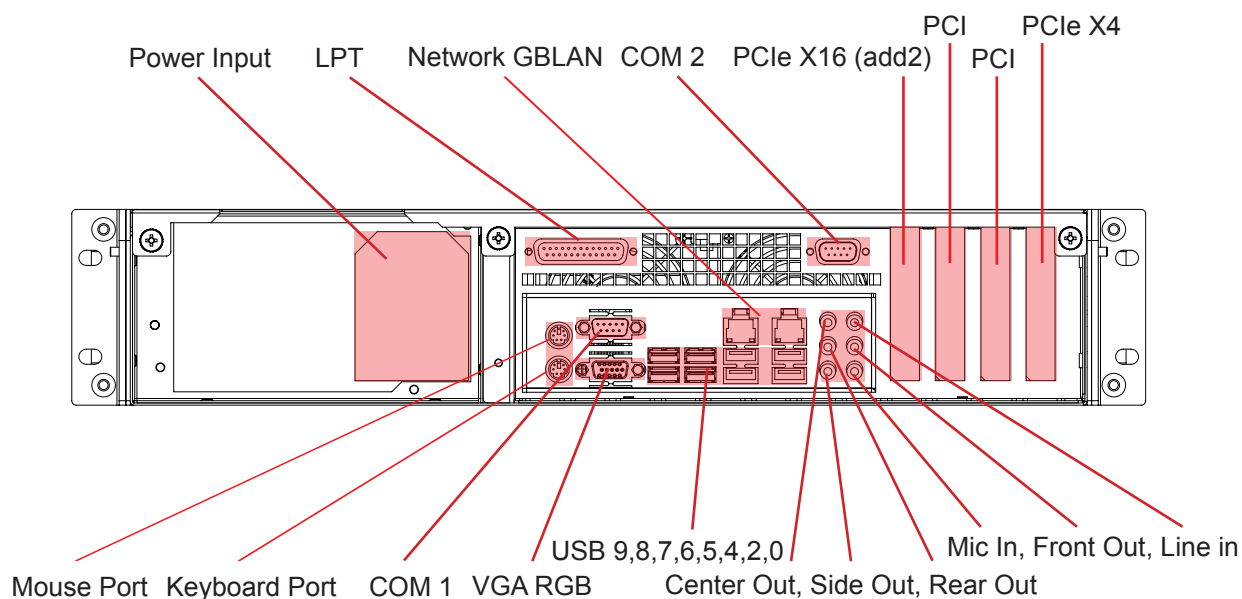
AIR FILTER:

The computer unit features a cleanable / replaceable air filter. This is located onto the front hatch as seen in the previous page. Clean this regularly (based on environmental factors) to allow the unit to continuously cool properly and to prolong the unit's lifetime and the components inside.

Physical Connections

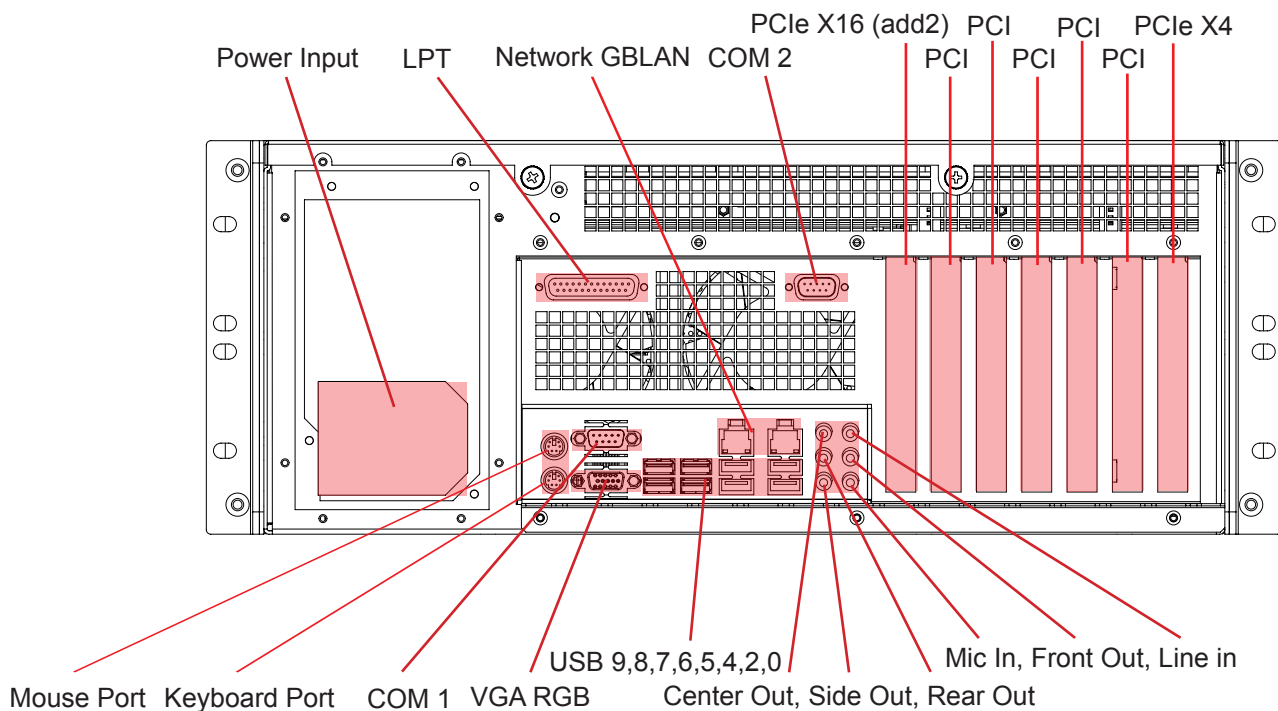
Connector area - HT 216 computer

Note: PCI slots may provide DVI-I or other functionality not visible in the general illustration below.

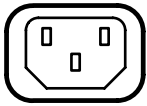


Connector area - HT 416 computer

Note: PCI slots may provide DVI-I or other functionality not visible in the general illustration below.

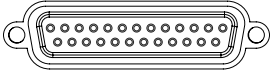


Physical Connections



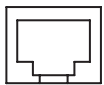
Power INPUT:

The internal AC power module supports both 115VAC/60Hz and 230/50Hz power input using a standard IEC European power plug. See specifications for more information.



LPT1 Parallel Port INPUT/OUTPUT:

Standard LPT1 Printer/Parallel (SPP/EPP/ECP) port using a D-SUB 25P Female connector. Fasten the cable to the connector using the provided screws on the cable housing itself.



Network INPUT/OUTPUT:

Supports 10/100/1000Mbps Ethernet (LAN). Suitable for twisted pair cables CAT.5E. Make sure the network cable connector "clicks" into the RJ-45 connector.



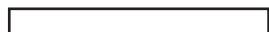
PCIe X16 (add2) Slot:

Supports Full Height and Full Length Profile card in one available slot. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.



PCI Rev2.3 Slots:

Supports Full Height and Full Length Profile card in two available slots. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.



PCIe X4 Slot:

Supports Full Height and Full Length Profile card in one available slot. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.

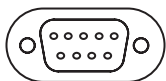


PS/2 Mouse and PS/2 Keyboard INPUTS:

Connect the PS/2 mouse cable to the PS/2 5P Connector (female).

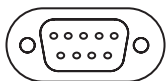
Connect the PS/2 keyboard cable to the PS/2 5P Connector (female).

Physical Connections



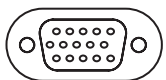
COM1 Serial Port INPUT/OUTPUT:

Supports RS-232 using D-SUB 9P Male connectors. Fasten the cable to the connector using the provided screws on the cable housing itself.



COM2 Serial Port INPUT/OUTPUT:

Supports RS-422/RS-485 (electronically isolated) using D-SUB 9P Male connectors. Fasten the cable to the connector using the provided screws on the cable housing itself.



RGB OUTPUT:

Will output a signal from the computer for use with external display or monitor. Connects via a High Density D-SUB 15P Female connector. Fasten the cable to the connector using the provided screws on the cable housing itself.



USB 9,8,7,6,5,4,2,0 INPUT/OUTPUT:

Supports any USB1.1 (12Mbps) or USB2.0 (480Mbps) compliant peripherals. Drivers for most USB devices are usually included in operating system or on separate installation CD's delivered with Third Party products. USB 1.1 devices will operate in USB 1.1 mode (12 Mbps).



Audio INPUT/OUTPUT:

All connectors are 3.5" Jack Stereo. AC'97 audio support. 7.1 channel. HD Audio. It can be configured via the operating system to act as 2-channel, 4-channel, 6-channel and 8-channel.

Port	2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic in	Mic In	Mic In	Mic In
Gray	-	-	-	Side Speaker Out
Black	-	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Yellow Orange	-	-	Center/Subwoofer	Center/Subwoofer

Specifications

Specifications - HT 216

Note: All specifications are subject to change without prior notice!

TECHNICAL DESCRIPTION

Computer Specifications: (Standard model)

• System Chipset	: Intel® Q965 ICH8D0
• Graphics	: Integrated VGA Chipset, Supports CRT interface.
• Graphics Resolution	: Max 2048 x 1536 @ 85Hz
• BIOS	: AMI 8MB Flash
• PCI Slots	: 2 x PCI Slots 32-bit, 3V and 5V Interface, Half Length and Low Profile
• PCIe-X1 Slots	: 1 x PCIe 4x, Half Length and Low Profile
• PCIe-X16 Slots	: 1 x PCIe 16x (add2), Half Length and Low Profile (Graphic mode)
• Media Drive	: 1 x DVD-RW/CD-RW Dual Recorder/Player
• Parallel Port (LPT)	: 1 x Bi-Directional Centronics (SPP/ECP/EPP)
• Serial Ports	: 1 x RS-232 + 1 x RS-232/RS-422/RS-485** (electrical isolated) ** Note: Isolated RS485, currently limited to 19200baud
• Ethernet	: 2 x 10/100/1000Mbps Gigabit LAN, Realtek RTL8111B
• USB Ports	: 8 x USB 2.0 + 2 x internal USB2.0
• Keyboard Port	: Standard PS/2 mini DIN connector
• Mouse Port	: Standard PS/2 mini DIN connector
• Audio	: On-board Audio Controller, AC97 Codec (7.1 channels, HD Audio) Line In, Line Out, Mic In
• Speaker	: On-board
• Power Manager	: ACPI

External Connector Type:

1 x HD DB15F
1 x DB25F
2 x DB9M
2 x RJ-45
8 x USB Type A
1 x PS/2
1 x PS/2
6 x JACKS

Power Specifications:

Power Supply Options:

- 115&230VAC - 50/60Hz : HT 216 STx-Axxx model (400W - Autorange)
- Power Consumption - Operating : 100W (TYP)

Available Models:

HT 216 STD-A324 with:

- 1 x Intel® Core™2 Duo Desktop CPU E6400 - 2.13GHz, 1066MHz FSB, 2MB L2 Cache
- 2 x 1 GB installed (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM)
- 1 x 250GB or more* 3.5" SATA, 7200 RPM, 8MB Cache
- 1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)

HT 216 STD-A228 with:

- 1 x Intel® Core™2 Duo Desktop CPU E6400 - 2.13GHz, 1066MHz FSB, 2MB L2 Cache
- 2 x 1 GB installed (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM)
- 1 x 250GB or more* 3.5" SATA, 7200 RPM, 8MB Cache
- 2 x Intel® 10/100/1000Mbps Ethernet (Teaming, Low Profile) - RJ45.
- 1 x Matrox P690 LP PCIe-X16, 128MB, Max 2048x1536 @ 85Hz with 2 x 29P DVI-I*
- 1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)
- * If 1600x1200 resolution is used, DVI signals must be set to CVT-RB (Coordinated Video Timing-Reduced Blanking) mode manually.

* Size indicated is the lowest size available/approved for current revision of data sheet. The unit will support increased disk space in future. Please contact sales for up-to-date status.

Available Accessories:

- HT 00215 OPT-A1 = 1 x Recovery Kit (USB Flash)
- HT 00250 OPT-A1 = Mounting Rails Kit: 2 x 20" ball bearing sliding rail and mounting kit, for 19" Rack)

Operating System Typenumbers:

- HT 216 ST0-Axxx = No OS
- HT 216 STD-Axxx = Microsoft® Windows® Embedded Enterprise (Win XP Pro Eng w/SP2c, 32bit)
- HT 216 ST3-Axxx = Microsoft® Windows® Embedded Enterprise (Win Server 2003 Eng, 32bit)
- HT 216 ST7-Axxx = Microsoft® Windows® Embedded Enterprise (Win 7 Pro Eng, 32bit)
- HT 216 ST8-Axxx = Microsoft® Windows® Embedded Enterprise (Win Server 2008 Eng, 32bit)

MECHANICAL DESCRIPTION

Physical Considerations:

- 430.00 (W) x 80.00 (H) x 460.80 (D) mm (main chassis w/o handles etc)
- 16.93" (W) x 3.46" (H) x 18.14" (D) (main chassis w/o handles etc)
- Weight: 10 kg (approx)
- Black (EP0301-4040627) Heavy-duty steel 2U Rackmount chassis
- Easy Removable air filter and Lockable front hatch door
- Supports 2 x 5¼" disk bays (one slim)
- Supports 4 x 3½" disk bays
- Supports rear cable strain reliefs with grounding thread
- Supports rear PCI card support holder, fixed to chassis
- 5 x Internal Cooling fans such as: High & Low pressure, PSU, CPU & PCI.

Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C
Humidity up to 95%
- Storage : Temperature -20 deg. C to +60 deg. C
Humidity up to 95%

Safety Considerations:

Even although the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

- Compass Safe Distance : HT 216 STx-Axxx Standard: 140cm - Steering: 80cm
- MTBF (Mean Time Between Failures) : 24790 hours

APPROVALS & CERTIFICATES

This product has been tested / type approved by the following classification societies:

IEC 60945 4th (EN 60945:2002)
IACS E-10
GL - Germanischer Lloyd

DNV - Det Norske Veritas
BV - Bureau Veritas
LRS - Lloyd's Register of Shipping

ABS - American Bureau of Shipping
ClassNK - Nippon Kaiji Kyokai

Specifications - HT 416

Note: All specifications are subject to change without prior notice!

TECHNICAL DESCRIPTION

Computer Specifications: (Standard model)

• System Chipset	: Intel® Q965 ICH8D0
• Graphics	: Integrated VGA Chipset, Supports CRT interface.
• Graphics Resolution	: Max 2048 x 1536 @ 85Hz
• BIOS	: AMI 8MB Flash
• PCI Slots	: 5 x PCI Slots 32-bit, 3V and 5V Interface, Full Height and Full Length
• PCIe-X1 Slots	: 1 x PCIe 4x, Full Height and Full Length
• PCIe-X16 Slots	: 1 x PCIe 16x (add2), Full Height and Full Length (Graphic mode)
• Media Drive	: 1 x DVD-RW/CD-RW Dual Recorder/Player
• Parallel Port (LPT)	: 1 x Bi-Directional Centronics (SPP/ECP/EPP)
• Serial Ports	: 1 x RS-232 + 1 x RS-232/RS-422/RS-485** (electrical isolated)
	** Note: Isolated RS485, currently limited to 19200baud
• Ethernet	: 2 x 10/100/1000Mbps Gigabit LAN, Realtek RTL8111B
• USB Ports	: 8 x USB 2.0 + 2 x internal USB2.0
• Keyboard Port	: Standard PS/2 mini DIN connector
• Mouse Port	: Standard PS/2 mini DIN connector
• Audio	: On-board Audio Controller, AC97 Codec (7.1 channels, HD Audio) Line In, Line Out, Mic In
• Speaker	: On-board
• Power Manager	: ACPI

External Connector Type:

1 x HD DB15F
1 x DB25F
2 x DB9M
2 x RJ-45
8 x USB Type A
1 x PS/2
1 x PS/2
6 x JACKS

Power Specifications:

Power Supply Options:

• 115&230VAC - 50/60Hz	: HT 416 STx-Axxx model (400W - Autorange)
• Power Consumption - Operating	: 100W (TYP)

Available Models:

HT 416 STD-A340 with:

1 x Intel® Core™2 Duo Desktop CPU E6400 - 2.13GHz, 1066MHz FSB, 2MB L2 Cache
2 x 1 GB installed (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM)
1 x 250GB or more* 3.5" SATA, 7200 RPM, 8MB Cache
1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)

HT 416 STD-A244 with:

1 x Intel® Core™2 Duo Desktop CPU E6400 - 2.13GHz, 1066MHz FSB, 2MB L2 Cache
2 x 1 GB installed (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM)
1 x 250GB or more, 3.5" SATA, 7200 RPM, 8MB Cache
2 x Intel® 10/100/1000Mbps Ethernet (Teaming, Low Profile) - RJ45.
1 x Matrox P690 PCIe-X16, 128MB, Max 2048x1536 @ 85Hz with 2 x 29P DVI-I*
1 x Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)
* If 1600x1200 resolution is used, DVI signals must be set to CVT-RB (Coordinated Video Timing-Reduced Blanking) mode manually.

* Size indicated is the lowest size available/approved for current revision of data sheet. The unit will support increased disk space in future. Please contact sales for up-to-date status.

Available Accessories:

- HT 00215 OPT-A1 = 1 x Recovery Kit (USB Flash)
- HT 00250 OPT-A1 = Mounting Rails Kit: 2 x 20" ball bearing sliding rail and mounting kit, for 19" Rack)

Operating System Typenumbers:

• HT 416 ST0-Axxx	= No OS
• HT 416 STD-Axxx	= Microsoft® Windows® Embedded Enterprise (Win XP Pro Eng w/SP2c, 32bit)
• HT 416 ST3-Axxx	= Microsoft® Windows® Embedded Enterprise (Win Server 2003 Eng, 32bit)
• HT 416 ST7-Axxx	= Microsoft® Windows® Embedded Enterprise (Win 7 Pro Eng, 32bit)
• HT 416 ST8-Axxx	= Microsoft® Windows® Embedded Enterprise (Win Server 2008 Eng, 32bit)

MECHANICAL DESCRIPTION

Physical Considerations:

- 431.00 (W) x 176.50 (H) x 443.00 (D) mm (main chassis w/o handles etc)
- 16.97" (W) x 6.95" (H) x 17.44" (D) (main chassis w/o handles etc)
- Weight: 25 kg (approx)
- Black (EP0301-4040627) Heavy-duty steel 4U Rackmount chassis
- Easy Removable air filter and Lockable front hatch door
- Supports 6 x 5¼" disk bays (4 x 5¼" + 2 x slim, one used for air)
- Supports 4 x 3½" disk bays
- Supports rear cable strain reliefs with grounding thread
- Supports rear PCI card support holder, fixed to chassis
- 5 x Internal Cooling fans such as: High & Low pressure, PSU, CPU & PCI.

Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C
Humidity up to 95%
- Storage : Temperature -20 deg. C to +60 deg. C
Humidity up to 95%

Safety Considerations:

Even although the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Compass Safe Distance	: HT 416 STx-Axxx Standard: 135cm - Steering: 90cm
MTBF (Mean Time Between Failures)	: 24790 hours

APPROVALS & CERTIFICATES

This product have been tested / type approved by the following classification societies:

IEC 60945 4th (EN 60945:2002)
IACS E-10
GL - Germanischer Lloyd

DNV - Det Norske Veritas
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LRS - Lloyd's Register of Shipping

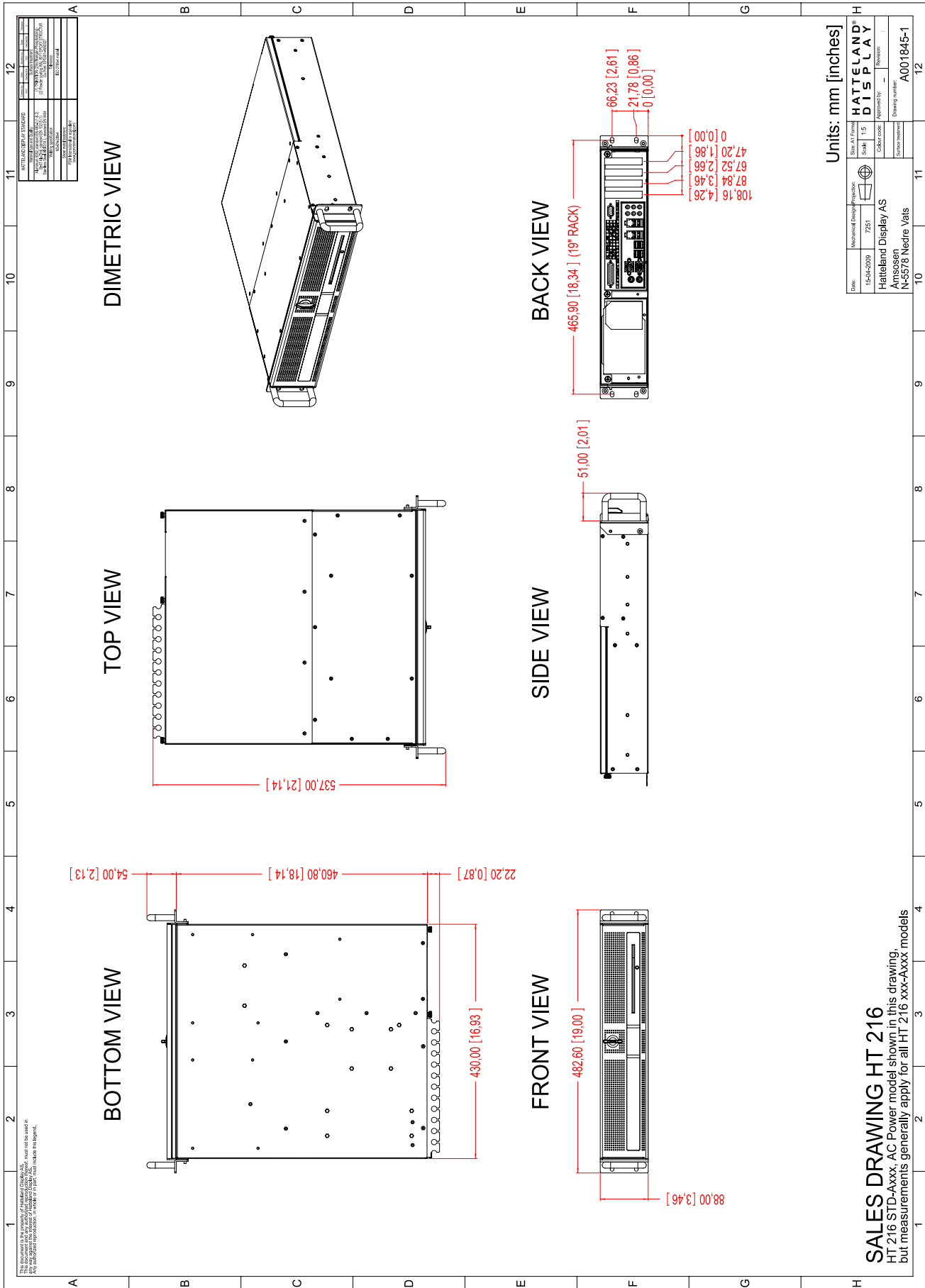
ABS - American Bureau of Shipping
ClassNK - Nippon Kaiji Kyokai

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Technical Drawings

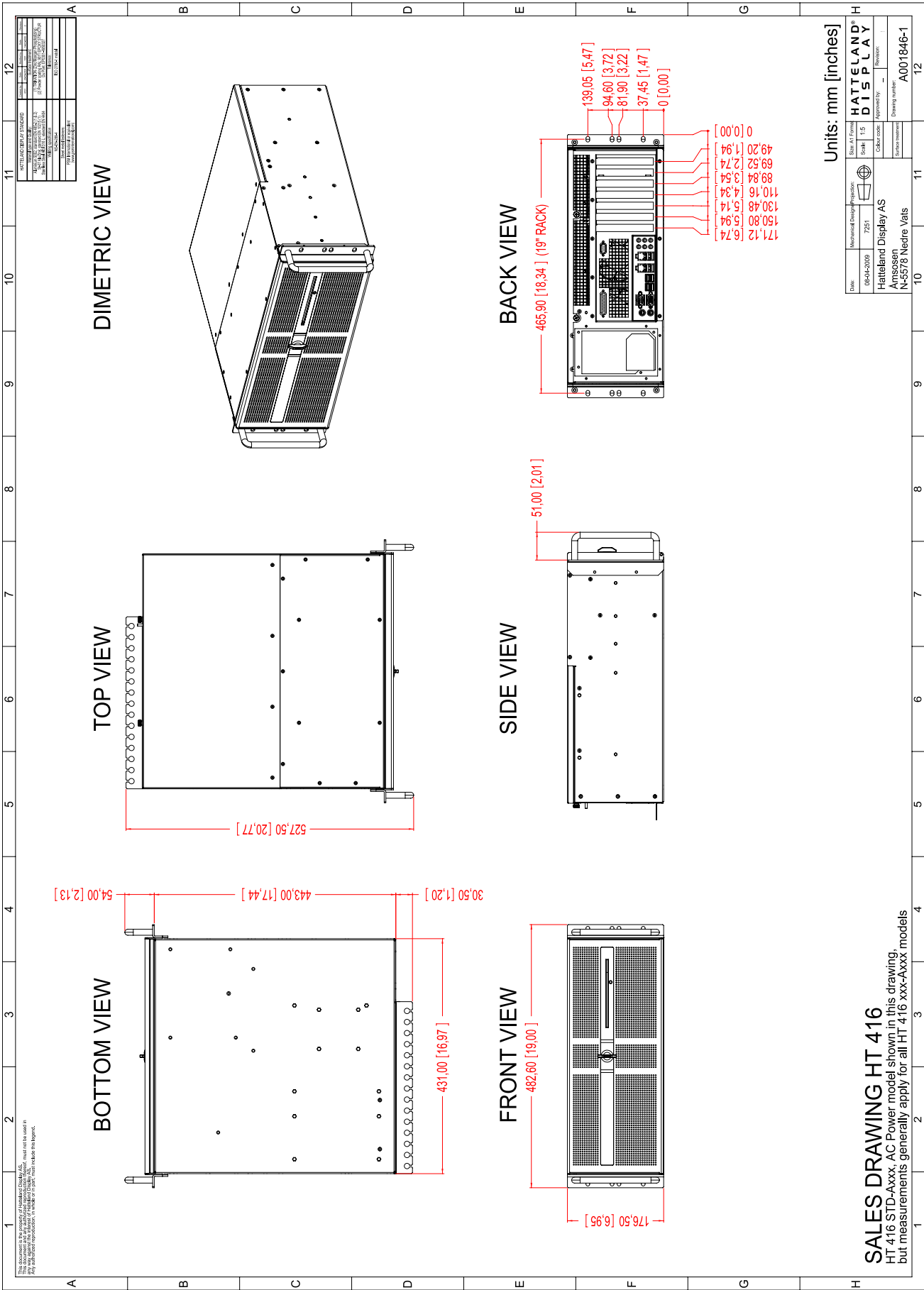
Technical Drawings - HT 216

Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.



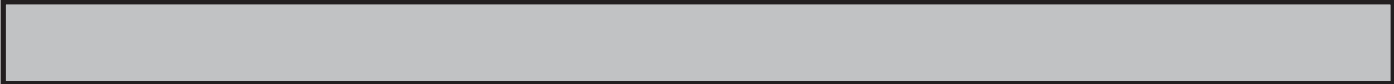
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Technical Drawings - Accessories

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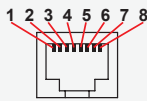
Appendixes

Pin Assignments - Common Connectors

Note: Not all connectors may be available on your specific product. This depends on the amount of additional hardware installed from factory, or customized solutions. These pin assignments are for the common connectors used. **Connectors are seen from users Point Of View (POV).**

Pin Assignments - RJ45 10/100 LAN

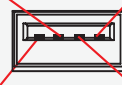
Use category 5 - twisted pair cable



Pin 01 - TDP	Transmit Differential Pair (Positive)
Pin 02 - TDN	Transmit Differential Pair (Negative)
Pin 03 - RDP	Receive Differential Pair (Positive)
Pin 04 - NC	Not Connected
Pin 05 - NC	Not Connected
Pin 06 - RDN	Receive Differential Pair (Negative)
Pin 07 - NC	Not Connected
Pin 08 - NC	Not Connected

Pin Assignments - USB TYPE A

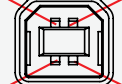
Pin 2: Negative Data Pin 4: Ground



Pin 1: VCC +5V Pin 3: Positive Data

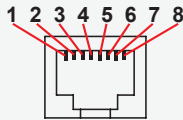
Pin Assignments - USB TYPE B

Pin 2: Negative Data Pin 1: VCC +5V



Pin 3: Positive Data Pin 4: Ground

Pin Assignments - RJ45 10/100/1000 GBLAN



Pin 01 - D0P	Differential Pair 0 (Positive)
Pin 02 - D0N	Differential Pair 0 (Negative)
Pin 03 - D1P	Differential Pair 1 (Positive)
Pin 04 - D2P	Differential Pair 2 (Positive)
Pin 05 - D2N	Differential Pair 2 (Negative)
Pin 06 - D1N	Differential Pair 1 (Negative)
Pin 07 - D3P	Differential Pair 3 (Positive)
Pin 08 - D3N	Differential Pair 3 (Negative)

Pin Assignments - 5P PS/2 MOUSE

Pin 6: Not Connected Pin 5: Mouse Clock

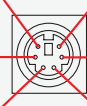


Pin 4: Vcc +5V Pin 3: Ground

Pin 2: Not Connected Pin 1: Mouse Data

Pin Ass. - 5P PS/2 KEYBOARD+MOUSE Combined

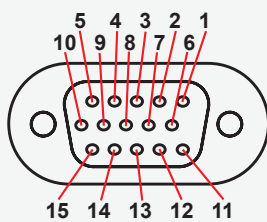
Pin 6: Mouse Clock Pin 5: Keyboard Clock



Pin 4: Vcc +5V Pin 3: Ground

Pin 2: Mouse Data Pin 1: Keyboard Data

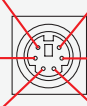
Pin Assignments - 15P HD RGB VGA



Pin 01	Red, analog
Pin 02	Green, analog
Pin 03	Blue, analog
Pin 04	Reserved for monitor ID bit 2 (grounded)
Pin 05	Digital ground
Pin 06	Analog ground red
Pin 07	Analog ground green
Pin 08	Analog ground blue
Pin 09	+5V power supply for DDC (optional)
Pin 10	Digital ground
Pin 11	Reserved for monitor ID bit 0 (grounded)
Pin 12	DDC serial data
Pin 13	Horizontal sync or composite sync, input
Pin 14	Vertical sync, input
Pin 15	DDC serial clock

Pin Assignments - 5P PS/2 KEYBOARD

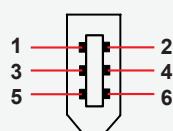
Pin 6: Not Connected Pin 5: Keyboard Clock



Pin 4: Vcc +5V Pin 3: Ground

Pin 2: Not Connected Pin 1: Keyboard Data

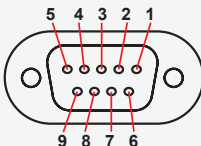
Pin Assignments - FIREWIRE IEEE-1394



Pin 01 - VCC	Power
Pin 02 - GND	Grounding for power and inner cable shield
Pin 03 - TPB-	Twisted Pair B- Receive Strobe, Transmit Data
Pin 04 - TPB+	Twisted Pair B+ Receive Strobe, Transmit Data
Pin 05 - TPA-	Twisted Pair A- Transmit Strobe, Receive Data
Pin 06 - TPA+	Twisted Pair A+ Transmit Strobe, Receive Data

Pin Assignments - 9P Serial COM RS-232

This connector is commonly used for:



Pin 01 - DCD	Data Carry Detect
Pin 02 - SIN	Serial In or Receive Data
Pin 03 - SOUT	Serial Out or Transmit Data
Pin 04 - DTR	Data Terminal Ready
Pin 05 - GND	Ground
Pin 06 - DSR	Data Set Ready
Pin 07 - RTS	Request To Send
Pin 08 - CTS	Clear To Send
Pin 09 - RI	Ring Indicate

Pin Assignments - 5P S-VHS/S-VIDEO

Pin 4: C - Color (chrominance) Pin 3: Y - Intensity (luminance)



Pin 2: Ground (C) Pin 1: Ground (Y)

Pin Assignments - RCA/BNC 1P COMP. VIDEO

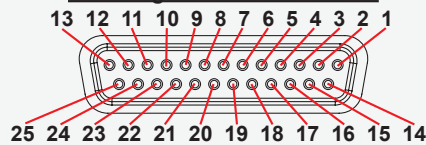


Pin 1: Video Signal Ground Shield

Note: The table above lists commonly-used RS-232 signals and pin assignments, however Serial Communication for Hatteland Display products may vary from product to product to support different end user systems. Please check additional pin assignments section in this manual for specific RS-232/RS-422/RS-485 pin assignments for your exact product.

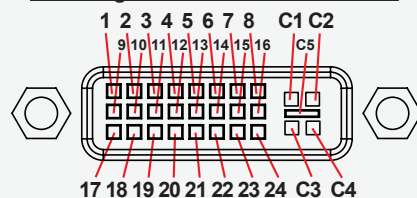
Pin Assignments - Common Connectors

Pin Assignments - 25P Parallel



Pin 01 - STROBE	This signal indicates to the printer that data at PD7..0 are valid.
Pin 02 - DATA0	Parallel data bus from PC board to printer. The data line are able to operate in PS/2 compatible bi-directional mode.
Pin 03 - DATA1	Same as Pin 02
Pin 04 - DATA2	Same as Pin 02
Pin 05 - DATA3	Same as Pin 02
Pin 06 - DATA4	Same as Pin 02
Pin 07 - DATA5	Same as Pin 02
Pin 08 - DATA6	Same as Pin 02
Pin 09 - DATA7	Same as Pin 02
Pin 10 - ACK	Signal from printer indicating that the printer has received the data and is ready to accept further data.
Pin 11 - BUSY	Signal from printer indicating that the printer cannot accept further data.
Pin 12 - PE	Signal from printer indicating that the printer is out of paper.
Pin 13 - SELECT	Signal from printer to indicate that the printer is selected.
Pin 14 - AUTO FEED	This active low output causes the printer to add a line feed after each line printed.
Pin 15 - ERR#	Signal from printer indicating that an error has been detected.
Pin 16 - INIT#	This active low output initialises (resets) the printer.
Pin 17 - SLIN#	Signal to select the printer sent from CPU board to printer.
Pin 18 - GND	Ground
Pin 19 - GND	Ground
Pin 20 - GND	Ground
Pin 21 - GND	Ground
Pin 22 - GND	Ground
Pin 23 - GND	Ground
Pin 24 - GND	Ground
Pin 25 - GND	Ground

Pin Assignments - 24P DVI-D & DVI-I



Pin 01	T.M.D.S. Data2 - (Digital - RED link 1)
Pin 02	T.M.D.S. Data2 + (Digital + RED link 1)
Pin 03	T.M.D.S. Data2/4 Shield
Pin 04	T.M.D.S. Data4 - (Digital - GREEN link 2)
Pin 05	T.M.D.S. Data4 + (Digital + GREEN link 2)
Pin 06	DDC Clock
Pin 07	DDC Data
Pin 08	Analog Vertical Sync (DVI-I only)
Pin 09	T.M.D.S. Data1 - (Digital - GREEN link 1)
Pin 10	T.M.D.S. Data1 + (Digital + GREEN link 1)
Pin 11	T.M.D.S. Data1/3 Shield
Pin 12	T.M.D.S. Data3 - (Digital - BLUE link 2)
Pin 13	T.M.D.S. Data3 + (Digital + BLUE link 2)
Pin 14	+5V Power (for standby mode)
Pin 15	Ground (for +5V and analog sync)
Pin 16	Hot Plug Detect
Pin 17	T.M.D.S. Data0 - (Digital - BLUE link 1) and digital sync.
Pin 18	T.M.D.S. Data0 + (Digital + BLUE link 1) and digital sync.
Pin 19	T.M.D.S. Data0/5 Shield
Pin 20	T.M.D.S. Data5 - (Digital - RED link 2)
Pin 21	T.M.D.S. Data5 + (Digital + RED link 2)
Pin 22	T.M.D.S. Clock Shield
Pin 23	T.M.D.S. Clock + (Digital clock + (Links 1 and 2)
Pin 24	T.M.D.S. Clock - (Digital clock - (Links 1 and 2)
Pin C1	Analog RED
Pin C2	Analog GREEN
Pin C3	Analog BLUE
Pin C4	Analog Horizontal Sync.
Pin C5	Analog Ground (return for RGB signals)

DDC = Display Data Channel /// T.M.D.S = Transition Minimized Differential Signal /// PIN C1,C2,C3,C4 = Only present on DVI-I connectors.
 NOTE: Connector shows a DUAL LINK design, but some units may not support it. Only products with 1920x1200 or more in resolution require / support DUAL LINK.

Additional connector pinouts may be available in third party motherboard manuals, primarily for computers only. Please see manual/drivercd delivered with your product or own section in this user manual.

Pin Assignments - HT 216/HT 416 Additional COM Ports

The unit can be configured for RS422 / RS485 communication via a DIP switch SW1. The switches are named DIP1-8. The DIP switch is located on the communication card mounted on the motherboard which are connected to the units 9P D-SUB Comports at the rear of the unit.



SW1 DIP1	TYP
OFF	RS422
ON	RS485

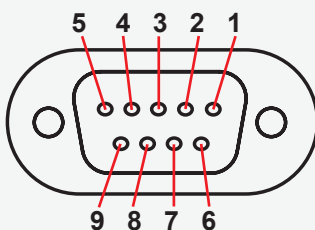
SW1 DIP2	MODE
OFF	Full duplex (4-wire mode)
ON	Half duplex (2-wire mode)

SW1 DIP3	Switching Signal
OFF	Timeout
ON	RTS-Signal

SW1 DIP4	Termination
OFF	Deactivated
ON	Activated

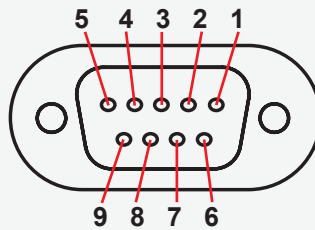
Setting SW1				Timeout	Min. Baudrate
SW1 DIP5	SW1 DIP6	SW1 DIP7	SW DIP8		
OFF	OFF	OFF	OFF	10.2ms	1200
OFF	OFF	OFF	ON	9.6ms	
OFF	OFF	ON	OFF	9.0ms	
OFF	OFF	ON	ON	8.4ms	
OFF	ON	OFF	OFF	7.8ms	
OFF	ON	OFF	ON	7.2ms	
OFF	ON	ON	OFF	6.5ms	
OFF	ON	ON	ON	5.9ms	
ON	OFF	OFF	OFF	4.8ms	2400
ON	OFF	OFF	ON	4.3ms	
ON	OFF	ON	OFF	3.7ms	
ON	OFF	ON	ON	3.1ms	
ON	ON	OFF	OFF	2.5ms	4800
ON	ON	OFF	ON	1.9ms	
ON	ON	ON	OFF	1.2ms	9600
ON	ON	ON	ON	0.6ms	19200

9P Serial COM RS422



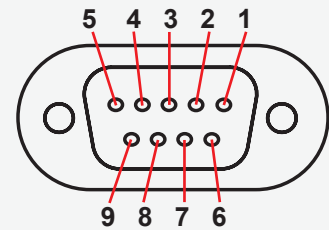
Pin 01 - TXD-	Transmit Data -
Pin 02 - RXD+	Receive Data +
Pin 03 - TXD+	Transmit Data +
Pin 04 - RXD-	Receive Data -
Pin 05 - GND	Ground
Pin 06 - N/C	Not Connected
Pin 07 - N/C	Not Connected
Pin 08 - N/C	Not Connected
Pin 09 - N/C	Not Connected

9P Serial COM RS485 Full Duplex



Pin 01 - TXD-	Transmit Data -
Pin 02 - RXD+	Receive Data +
Pin 03 - TXD+	Transmit Data +
Pin 04 - RXD-	Receive Data -
Pin 05 - GND	Ground
Pin 06 - N/C	Not Connected
Pin 07 - N/C	Not Connected
Pin 08 - N/C	Not Connected
Pin 09 - N/C	Not Connected

9P Serial COM RS485 Half Duplex



Pin 01 - Data-	Data Negative
Pin 02 - N/C	Not Connected
Pin 03 - N/C	Not Connected
Pin 04 - N/C	Not Connected
Pin 05 - GND	Ground
Pin 06 - Data+	Data Positive
Pin 07 - N/C	Not Connected
Pin 08 - N/C	Not Connected
Pin 09 - N/C	Not Connected

GENERAL TROUBLE-SHOOTING

CD-ROM FAILURE OR READ/DETECTION PROBLEMS?

If the product are operated/located in a area with extreme condensation, the CD/DVD-ROM drive may not work correctly due to condensation on the read head. Keep the product on for a while until it's reached normal operating temperature, and retry accessing discs. Otherwise, consider using USB memory sticks or alternative storage devices.

NO CD-ROM AVAILABLE ON YOUR PRODUCT FOR INSTALLING DRIVERS/SOFTWARE?

Please use USB memory sticks, USB Floppy drive, USB CD-Rom Drive or alternative storage devices to transfer or install software on CD-ROM-less units.

RECOVERY/RESCUE IMAGE

The Recovery Kit (USB Flash) media access a hidden partition image located on factory delivered units with HDD/SDD hardware installed. This image is not accessible from any operating system, only by the Recovery Kit (USB Flash) provided by Hatteland Display.

Note that all files created after first time factory boot will be DELETED!

Restore from external USB recovery image (HT 00215 OPT-A1):

- 1: Insert the USB Flash media into the computer usb connector.
- 2: Restart the computer.
- 3: On the first screen that appear, press "Delete" or "F2" on the keyboard (depending on BIOS model) to bring up the BIOS setup screen.
- 4: Select "Advanced BIOS features" or "Boot" (depending on BIOS model).
- 5: Set "Harddisk boot priority" to "USB HDD" as number 1 or select "Hard Disk Drives", then modify "1 st" to "USB:" depending on BIOS model.
- 6: Press F10 and then Enter on keyboard, or "F4" to save settings (depending on BIOS model).
- 7: Follow the on screen instructions that will be executed from the USB Flash media, such as;

```
Hatteland Display Backup Tool, version 1.0.1
Copyright (c) 2000 Hatteland Display and Symantec Corp.

===== Warning! =====
Restoring the hard drive image will
erase all data on the entire drive.
Proceed only if you have saved all
recoverable personal data.

Please choose an option below:
1. Continue to restore hard drive
2. Exit program
```

```
Hatteland Display Backup Tool, version 1.0.1
Copyright (c) 2000 Hatteland Display and Symantec Corp.

The provided hard drive image is only valid for HT XXX

Please choose an option below:
1. Restore hard drive
2. Exit program
```

- 8: After the restore operation is complete, remove the USB Flash Media and restart.

```
The image integrity check was successful. Now restoring factory image...
Hatteland Display Backup Tool, version 1.0.1 status:

Drive restore was successful. Please remove the USB-drive and reboot your system
```

- 9: The computer is now restored to its original factory state.

- 10: If rescue failed, an error message will be displayed.

```
===== Warning! =====
The image integrity check failed, your system was not restored
Contact Hatteland Display Product Support Services
```

```
===== Warning! =====
A problem was encountered restoring the factory drive image.
Contact Hatteland Display Product Support Services
```

HATTELAND® DISPLAY

Declaration of Conformity

We, manufacturer

Hatteland Display AS

Åmsosen, N-5578 Nedre Vats, Norway

declare under our sole responsibility that the
JH MMD, JH MMC, JH STD, JH MIL, HM NMD, HM MIL,
HM CMD, HT STD, HD MMD, HM MMD & HT MMC
product ranges is in conformity with the following
standards in accordance with the EMC Directive.

Low Voltage Directive 2006/95/EC
EN 60950

EMC Directive 2004/108/EC
EN 55022 Class A
EN 55024

Signature:.....
Frode Grindheim
Vice President Product Management
Nedre Vats, Norway

Signature:.....
Arne Kristiansen
Site Manager - Test & Commission Division
Oslo, Norway



CE MARK FIRST AFFIXED DATE (11 March 2010)

Return Of Goods Information

Return of goods:

(Applies not to warranty/normal service/repair of products)

Hatteland Display referenced as “manufacturer” in this document.

Before returning goods, please contact your system supplier before sending anything directly to manufacturer. When you return products after loan, test, evaluation or products subject for credit, you must ensure that all accessories received from our warehouse is returned. This applies to cables, powermodules and additional equipment except screws or similar, user manual, datasheets or other written paper documents. Furthermore, the product must not have any minor / medium or severe scratches, chemical spills or similar on the backcover, front frame or glass.

This is needed to credit the invoice 100%. Missing parts will not be subject for credit, and you will not get total credit for returned product. You will either be charged separately or the amount is withdrawn from the credit. If you decide to ship the missing items on the after hand, you will get 100% credit for that particular invoice or items received at manufacturer incoming goods control. Please contact our service/sales department if additional questions

Approved packaging methods/materials:

(Applies to all shipments to manufacturer)

When returning goods, please make sure you surround the product with the following material, whenever possible: Original packaging from manufacturer, firm foam material, bubble wrap or lots of PadPack paper or Foam chips/polyester wrapped in sealed plastic bags. In any case, always use a solid cardboard box to surround everything.

Not approved packaging methods/materials are: Foam chips, expanded polyester, clothes, nothing, or too little, or anything that will crumble and get into the ventilation holes of products and cardboard boxes that are not suitable to secure the product during shipment.

Terms Of Sale And Delivery

1) APPLICATION

The terms of sale and delivery apply for Hatteland Display.

2) PRICE

- a) The price is per each, if nothing else has been stated, VAT not included. Price is based on the prices from our suppliers, current custom rates, taxes, rate of exchange and international raw material prices. We reserve ourselves the rights to adjustments in case of alternation on the above mentioned.
- b) Included in the price is the supplier's standard packing. In case of re-packing/smaller quantities we reserve ourselves the right to add an additional sum for warrantable packing according to CECC 0015 (Basic inspection for protection of electrostatic sensitive devices)

3) VALIDITY

If nothing else has been stated in our quotation, the offer is valid for 30 days from the date of quotation.

4) PACKAGE QUOTATION

A package quotation means that all the components offered, must be ordered by us. If one component or more are removed from the quotation, the prices given in the package quotation are not valid.

5) TERMS OF PAYMENT

Cash on delivery or payment in advance. Net granted for companies, schools and institutions only, according to agreement. In case of too late payment 1.5% interest/month will be charged. Seller has mortgage rights in the goods delivered until the purchase price, additional interests and charges have been paid in full. Accepted bill is not considered as payment until it has been honoured in full.

6) TIME OF DELIVERY

The quoted time of delivery is based on information from our suppliers. We disclaim any responsibility for the consequences of any delay or cancellation from our suppliers. Belated delivery gives not solely the right for cancellation.

7) DELIVERY POINT OF TIME

Goods are considered delivered to customer when handed over to charterer.

8) FREIGHT / PACKING / FORWARDING FEE

Hatteland Display AS charge NOK 50,- in forwarding fee for orders below NOK 1000,-.
Freight charge according to expenses for orders above NOK 1000,-. VAT not included.

9) COMPLAINT

By receipt customer must check goods for obvious defects which have to be claimed within 8 days from receipt. Otherwise acceptance of complaint can not be counted on.

10) GUARANTEE / SERVICES

Time of guarantee is calculated from our date of shipment, and applies to the extent that we are covered by our supplier's guarantee regulations. The guarantee does no longer apply if:

- I) there has been encroached upon the goods without seller's consent
- II) terms of payment is not fulfilled
- III) the goods have been damaged due to unskilled treatment
- IV) components which are sensitive for static electricity have not been unpacked and treated in a secure way.

Minimum requirements: CECC 00015's standards for handling of such components. The guarantee does not include fair wear and tear.

11) RESPONSIBILITY

Seller undertake to deliver faultless and functional capable goods according to existing technical specifications. Seller disclaim responsibility for any damage or loss which directly or indirectly may be caused due to failure or defect with the delivered goods, if carelessness from the seller can be limited up to the cost of the goods. The supplier's responsibility for defects with the supplied goods do not include secondary damage or loss.

Terms

12) CANCELLATION / RETURN

Binding sales contract is concluded when we have confirmed customer's purchase order. Any disagreements in our order confirmation must be reported to seller within 6 days. The agreement can not be altered without our permission, after acceptance from our supplier. If goods are wanted to be returned, a Return No must be assigned from seller. Returned goods without a Return No will not be accepted. By return of stock listed goods, 20% return fee is charged. Returned goods are shipped on customer's account and risk.

13) LOAN, RENT and DEMO

When borrowing of goods for demo/test, the date of return must be added to the document. If no date has been stated, date of return is two weeks from the date of the document. Before return, seller must be contacted for a Return No (RTK). Goods which have been sold with an agreed right of return within stated terms, shall also have a Return No. The Return No must be obtained before the stated date of return. Returned goods without a Return No, or which have not been packed in original packing, will not be accepted.

14) LIMITATIONS

If any of our suppliers claim limited delivery terms towards us, our terms of delivery will be restricted according to those.

15) SOFTWARE

Sold or borrowed software is not allowed to be copied or spread in other ways, without a written permission.

16) RE-EXPORT

Goods delivered from seller may be subject to special rules of exportation in their supplier's native country. Buyer is responsible to obtain necessary permissions for further export/re-sale.

17) QUESTION IN DISPUTE

To settle any dispute the Karmsund Herredsrett is approved the legal venue.

INSTRUCTIONS FOR THE CONSIGNEE

1) CONTROL

Control the goods immediately by receipt. Examine the quantity towards the invoice/packinglist/shipping documents. Look for outward defects on the packing which may indicate damage on or loss of contents. Control the container and the seals for any defects.

2) SECURING EVIDENCE

When defects on the goods have been found, evidence must be secured, and seller must be informed. Call the transporter and point out the defects. Add a description of the defects on the goods receipt, the forwarder's copy of the way-bill or on the driving slip.

3) RESCUE

Bound the damage. Try to restrict the damage and the loss. Seller will compensate expenses incurred due to reasonable security efforts in addition to damage and loss.

4) COMPLAINT

Write immediately a complaint to the transporter or his agent. Forward immediately the complaint to the transporter or his agent, and hold the transporter responsible for the defects. The complaint must be sent at the latest:

- for carriage by sea: within 3 days
- for overland / air transportation within 7 days

5) DOCUMENTATION

For any claims the following documentation is required, and must be forwarded to the company or their agent: invoice, way-bill and/or bill of landing, and/or statement of arrival, inspection document, besides a copy of the letter of complaint to the transporter.

Notes

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Revision History

Please note that references to page numbers may only be valid for the latest revision.

Rev.	By	Date	Notes
0	SE JE	30 Apr 2009	Release for internal review.
1	SE JE	28 May 2009	Final release v1. Added COM port pin assignments.
2	SE JE	09 Jul 2009	Updated specifications page 22,23
3	JE SE	27 Aug 2009	Revised info about USB recovery image and specs.
4	JE SE	10 Sep 2009	Added note about HDD/SDD future sizes (page 22,23)
5	JE SE	17 Sep 2009	Revised PCI slots amount to 5 instead of 4 (page 23) Added computer introduction page (page 9)
6	JE SE	30 Oct 2009	Minor text changes in Contents of Package (page 4) Revised specifications, add ABS Type Approval and removed LRS Type Approval (page 22,23)
7	AK SE	03 Dec 2009	Added BV and Nippon to Type Approved (23,23)
8	AK SE	21 Jan 2010	Added DNV Type Approved (page 22,23)
9	JE AK SE	18 Mar 2010	Added GL Approval (page 24,25) Added MTBF value (page 24,25)
10	AnK JE SE	07 Jan 2011	Added Installation chapter for HT 00250 OPT (page 16) Revised specifications, include HT 00250 OPT (page 24,25) Added HT 00250 OPT-A1 Sliding Rails Accessory drawing (page 32)
11	JE SE	30 Mar 2011	Revised Contents of Package chapter (remove printed manual) page 5 Revised specifications, added LRS type approval and Operating System ID (page 12, 28,29)
12	JE SE	20 Jun 2011	Revised contents of package (added available accessories) page 5 Revised specifications (RS-485, 19200 baud limitation note) page 24,25 Revised Recovery Kit (USB Flash) HT 00215 OPT User Guide (page 37)

